May 21, 1957

REPORT ON RESEARCH PROJECTS
for the
FISCAL YEAR 1956-57

I. Name Lederberg, J. Dept. Genetics Proj. No. 56: 245

Title of project Genetics of Bacteria

II. Personnel: Robert E. Wright] Graduate students: research assistants
Totsuo Iino]

Jean Halvorsen

III. Statement of other financial support, if any, for this project:

NIH	8 500	Rockefeller	6,000
NSF	7 000		

IV. Brief statement of specific progress made during the year:

1. Bacterial L-forms consist of outgrowths of wall-less bacteria (i.e. protoplasts) in a confining agar milieu. The loss of the wall may be occasioned either by inhibition of its synthesis, by penicillin, or by internal genetic blocks, e.g. of the biosynthesis of diamino-pimelic acid.
2. Efforts to import DNA into protoplasts for genetic effect have so far failed.
3. Further mutations influencing the synthesis of flagellar proteins have been identified and characterized. There is a chain of common synthetic steps, followed by two divergent, and competitive, pathways.
4. Most mutants influencing galactose fermentation in E. coli have a simple physiological genetic pattern: one group, in which galactokinase is deficient, form a single genetic position-effect set (cistron), and the same for a second, in which the missing enzyme is a Uridine-Diphosphate-Hexose transferase. However, there are additional mutants which do not fall into this simple scheme.

V. Publications that have appeared in print from July 1, 1956 to June 30, 1957.
See attached sheet (items checked)

VI. Manuscripts accepted for publication but not yet printed:

Viruses, genes and cells. Bacteriological Reviews

The pink copy should be returned to the Graduate School Office on or before August 1, 1957. The blue copy is for your file.